

AMENDMENT UNDER 37 CFR § 1.111
U. S. Application No. 10/759,529

REMARKS

Review and reconsideration on the merits are requested.

The Prior Art

U.S. 5,958,503 Dumoulin et al (Dumoulin); Lowe (Reference U, PTO-892); U.S. 5,364,886 Loliger et al (Loliger); U.S. 5,023,101 Sugihara et al (Sugihara); U.S. 5,981,781 Knowlton (Knowlton); U.S. 5,928,704 Takeda et al (Takeda); U.S. 2002/0119238 A1 Pires (Pires).

The Rejections

Claims 1, 10 and 21 as anticipated by Loliger.

Claims 1, 10 and 21 as anticipated by Sugihara.

Claims 1-3, 10 and 21 as anticipated by Knowlton.

Claims 1-3, 10 and 21 as obvious over Knowlton.

Claims 1, 4, 10-16, 20-21 and 25 as anticipated by Takeda.

Claims 18-19 as obvious over Takeda in view of Loliger.

Claims 1-3 and 5-10 as obvious over Loliger alone or if necessary in view of Takeda.

Claims 16 and 17 as obvious over Pires.

Claims 16-19 and 21-24 as obvious over Dumoulin as further evidenced by Lowe.

The Examiner's reading of the prior art and rejections are set forth in the Action and will not be repeated here except as necessary to an understanding of Applicants' traversal which is now presented.

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Traversal

Claim Rejection under 35 U.S.C. §102 based on Loliger

Loliger discloses a process for preparing an antioxidant for protection of a fat against oxidation which comprises: dissolving ascorbic acid in a polar solvent; stirring tocopherol and a lecithin at a temperature not greater than 60°C to form a mixture; mixing the ascorbic solution into the tocopherol and lecithin mixture; and eliminating the solvent from tocopherol, lecithin and ascorbic acid solution mixture at a temperature not greater than 60°C.

Loliger thus relates to a process for preparing an antioxidant consisting of lecithin, tocopherol and ascorbic acid in which the main component is lecithin. On lines 21-23 at col. 2, Loliger discloses that “In the process according to the invention, the antioxidant mixture is preferably used in a quantity of 0.55 to 2.3% by weight, based on the fat.” Additionally, in Tables 1-6 in Examples 1-17, the amount of additive of tocopherol, ascorbic acid(AA) and lecithin(LC) to oil is described in Loliger. The following is a Table in which the amount and the difference of LC are described.

Examples	Tocopherol (ppm)	AA (ppm)	LC (%)	Difference of Lecithin
1	250	250	1	
2	250	500	1	
3	500	500	1	
4	500	1000	1	
5	1000	500	1	
6	500	2000	1	
7	500	1000	1	
8	500	1000	1	*
9	500	1000	1	*
10	500	1000	1	*
11	500	1000	1	*
12	500	1000	1	*

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Examples	Tocopherol (ppm)	AA (ppm)	LC (%)	Difference of Lecithin
13	1000	500	1	
14	310	250	0.5	
15	600	1000	1	
16	250	500	0.5	
17	1000	2000	2	

The amount of ascorbic acid added to the oil is 250-2000 ppm, while organic acid is added in the present application is 2-60 ppm.

The process of the present application is completely different from Loliger. As described at line 6 from the bottom on page 6 to line 16 on page 7, the present invention relates to a process for producing a fat for confectionary production including ascorbic acid, which comprises adding ascorbic acid in a state of a solution to a fat and dispersing the ascorbic acid with dehydration at high temperature. The invention of Loliger relates to a process of preparing an antioxidant which comprises dissolving ascorbic acid in polar solvent such as absolute ethanol; dissolving and dispersing the ascorbic acid using a polar solvent as a mediator into a mixture of lecithin and tocopherol; and eliminating the polar solvent at a low temperature of not greater than 60°C over a long time. Specifically, the present invention was achieved based on the fact that ascorbic acid is stable in a non-hydrous phase in a fat at high temperature which could not have been expected before the present invention. Additionally, by the difference of the method for dissolving and dispersing ascorbic acid, even when the ascorbic acid amount is less than that in Loliger, an adequate effect can be shown. In Loliger, there is no disclosure of a practical and effective method for adding an organic acid as described in the present application.

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Thus, the differences in the production method of the present invention from Loliger are as follows:

1. Organic acids can be treated at a higher temperature than Loliger.
2. The step of dissolving organic acids in a polar solvent is not necessary. In the present application, water can be used as an alternative. However, there is the possibility that the Examiner points out that water is also a polar solvent. In this regard, Applicants wish to point out that the organic acid can be dissolved in water which is easily treated in accordance with the present invention.
3. The remarkable effect of improvement of fatty taste can be achieved by the use of a very small amount of organic acids.

Accordingly, Applicants submit that the present invention is both novel and unobvious over Loliger.

Claim Rejection under 35 U.S.C. §102 based on Sugihara

It is known that ascorbic acid is often used in the form of its ester since it is not easily dissolved in a fat. Additionally, a method for adding ascorbic acid which is not based on the present application involving only addition and contact of ascorbic acid is known in the fat producing field.

Loliger helps to put Sugihara in context. Without using such an ordinary method, Loliger uses an organic solvent to dissolve organic acids and then eliminate the organic solvent.

In the present invention, the addition of ascorbic acid is enabled at a higher temperature and at a lower concentration than in Loliger.

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Sugihara only indicates the possibility of the addition of ascorbic acid according to the conventional art.

Further, the scope of the claims of the present application does not include Sugihara and Sugihara would not lead one of ordinary skill in the art to the present claims, i.e., the present claims are novel and unobvious even if there is disclosure in Sugihara that “antioxidant such as ascorbic acid and citric acid is included in shortening”. Additionally, even if “shortening” which includes an antioxidant such as ascorbic acid and citric acid is added to “hard butter” for confectionary use, since the composition described in the present application is different from “shortening”, the present invention is different from Sugihara.

Claim Rejection under 35 U.S.C. §§ 102 and 103 based on Knowlton

The “fat” in the present application includes “fat” and “oil”. Although it is true that the addition of citric acid is disclosed in Knowlton, the addition of citric acid disclosed in Knowlton is merely conventional art since no detailed description of the addition of citric acid is given in Knowlton. Regarding to lines 49-51 at col. 11 and lines 18-24 at col. 12 which the Examiner refers to in Knowlton, there is no detailed description of the method for addition. Regarding increasing oxidative stability, there is no description other than making a fatty acid formation rich in oleic acid. The only two parts which relate to the addition of citric acid pointed out by the Examiner are not with the aim of prevention of oxidation, rather, simply represents conventional procedures in this art which do not relate to the prevention of oxidation.. Further, the amount of addition is out of the scope of the present application.

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Additionally, stability in Knowlton and improvement of fatty taste described in claim 21 in the present application are not the same.

**Claim Rejection under 35 U.S.C. §102 and §103 based on Takeda and on Takeda in view of
Loliger**

It is true that ascorbic acid and citric acid are included in the components in Takeda, which is indicated at lines 17-25 at col. 4 in Takeda. However, there is no detailed description of a method for the addition of ascorbic acid and citric acid. Thus, the description in Takeda relates to conventional methods for addition as described above. Takeda does not disclose that an insoluble organic acid such as ascorbic acid is easily dissolved in a fat and the organic acid can be effective in low amounts as in the present application.

Accordingly, the present claims are not anticipated by nor rendered obvious by Takeda.

**Claim Rejection under 35 U.S.C. §103 base on Loliger alone or if necessary in view
of Takeda**

The defects of Loliger and Takeda have been above discussed in detail.

Given the objectives on Loliger, Applicants respectfully submit that one of ordinary skill in the art would not be led to modify Loliger in view of Takeda.. Specifically, one of ordinary skill in the art would not be led to use lower amounts of ascorbic acid in Loliger since Takeda does not disclose that an insoluble organic acid such as ascorbic acid is easily dissolved in the fat and since Loliger is not directed to preventing oxidation, there would not be any reason for one of ordinary skill in the art to use such lower amounts of the ascorbic acid from the teaching in Takeda.

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Claim Rejection under 35 U.S.C. §103 based on Dumoulin et al in view of Lowe

With regard to Dumoulin, the Examiner states that “The claims appear to differ in the recitation of the inclusion of an oil in water cream composition”. However, “an oil in water cream composition”, not “a water-in-oil emulsion” is recited in claim 1. A composition which is a “water-in-oil emulsion” (W/O type) is usually, an emulsion like a margarine rather than a cream. Although “oil in water”(O/W type) is described in Dumoulin as background art, the Dumoulin invention relates to the W/O type.

Applicants respectfully submit that the Examiner’s position that the present application would be rendered obvious by a combination of teaching of an O/W type milk and W/O type prior art is unreasonable. Further, when the milk is an O/W type emulsified milk, there is no disclosure of adding an organic acid to the emulsified globules in Dumoulin.

With respect to pH, since pH conceptually means pH in a water phase, the addition of organic acids to adjust pH necessarily means addition of organic acids to a water phase. In fact, an organic acid cannot be selectively added to a water phase or an oil phase. However, when an organic acid is added to only O/W type emulsified milk to adjust pH, it preferentially dissolves in the hydrophilic water phase. Therefore, such is clearly different from the organic acid in the present application which is dispersed in an oil phase. In the present application, if organic acids were added for pH adjustment, it would not be reasonable to add them to an oil phase wherein only a little amount is dissolved. Additionally, dispersing methods of organic acids in oil are not disclosed at all in Dumoulin. The amount of organic acids in Dumoulin is 0.5 - 1.0%. The reason for the difference in the amount of organic acids added as compared to the present

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invention is based on the object of the addition of organic acids described above. In the present invention, since the object is not adjustment of pH, it is not necessary to add a large amount of organic acid to the product.

As set out in claim 16 of the present application, the organic acid is included in a fat for confectionary and not included in the whole product. Therefore, the present application relates to a product which comprises a “fat for confectionary which includes organic acids.”

Further, as earlier described, Applicants submit that the patentability of the claims rejected cannot be based on prior art which does not disclose any method of adding an organic acid to a fat. Further, Dumoulin simply discloses phases including a water phase and some type of unknown emulsified type of phase.

Finally, “fatty taste” and “freshness” are clearly different. At col. 3, lines 36-40 in Dumoulin, there is disclosure that: “Advantageously, the said food product according to the invention also comprises an acidity regulator (regulator of the pH of the composition obtained) preferably consisting of citric acid. In addition, the latter offers an organoleptic sensation of “freshness” necessary in a fruit composition.” The latter, it is believed, is supposed to mean citric acid and that the citric acid provides a sensation of freshness which is necessary in a fruit composition. Namely, it is addition of a sense or feeling which is originally included in citric acid fruit compositions and such essentially differs from the present application since the present application relates to an improvement of fatty taste, even if there is similarity in expression. Further, Applicants respectfully submit that prior art simply teaching the mere addition of

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organic acid in a conventional manner does not in any fashion suggest decreasing fatty acid taste.

Lowe does not remedy any of the defects of Dumoulin, discussed in detail.

Withdrawal of all rejections and allowance is requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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